

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	855	piezoelectric speaker loudspeaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 12:40
S2	739	S1 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/02 16:48
S3	36	S2 diaphragm convex	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/02 16:50
S4	16	S3 cover	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/02 16:51
S5	1	(piezoelectric adj disk) ("plano-convex" or "plano convex" or planoconvex) cover microphone loudspeaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 12:45
S6	4	(piezoelectric adj disk) ("plano-convex" or "plano convex" or planoconvex) cover	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 12:45
S7	1	(piezoelectric adj disk) ("plano-convex" or "plano convex" or planoconvex) microphone loudspeaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 12:45
S8	10	(piezoelectric adj disk) ("plano-convex" or "plano convex" or planoconvex)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 12:46

## EAST Search History

S9	8	S8 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 12:47
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## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	4447	piezoelectric diaphragm cover	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:28
S2	4023	S1 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:29
S3	111	S1 (convex near surface)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:30
S4	105	S3 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:30
S5	27	S4 annulus	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:31
S6	23	S4 speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:32

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	363	(plano-convex or planoconvex or "plano convex") piezoelectric	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:52
S2	329	S1 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:51
S3	5	S2 speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:51
S4	0	(plano-convex or planoconvex or "plano convex") (piezoelectric adj speaker)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:52
S5	0	(plano-convex or planoconvex or "plano convex") (piezoelectric near speaker)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:52
S6	5	(plano-convex or planoconvex or "plano convex") piezoelectric speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:53
S7	0	(plano-convex or planoconvex or "plano convex") (piezoelectric with speaker)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:53
S8	18	(plano-convex or planoconvex or "plano convex") piezoelectric microphone	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 14:13

## EAST Search History

S9	57	(plano-convex or planoconvex or "plano convex") piezoelectric sound	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 13:56
S10	4447	diaphragm piezoelectric cover	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 14:14
S11	126	diaphragm (piezoelectric adj disk) cover	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:05
S12	29	S11 convex	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 14:16
S13	25	S12 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 14:47
S14	4	("3743446").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/05/03 14:48
S15	2	("5020947").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/05/03 14:48
S16	2	("5263341").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/05/03 14:49

## EAST Search History

S17	2	("5349652").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/05/03 14:50
S18	2	("5349852").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/05/03 14:51
S19	2	("5295791").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/05/03 14:51
S20	2954977	diaphragm (piezoelectric adj disk) cover	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/03 15:05
S21	116	S11 @ad <"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:07
S22	13	S21 speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:28
S23	1	convex-plano speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:31
S24	163	convex-plano	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:31

## EAST Search History

S25	134	S24 @ad<"20040512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:32
S26	5	S25 sound	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:32

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	60035	loudspeaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/03 15:33
S2	256181	S1 piezoelectric	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/03 15:34
S3	2568	S1 piezoelectric	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:34
S4	2191	S3 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:36
S5	161	S4 convex	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:37
S6	79	S5 diaphragm	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/03 15:37



## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	0	piezoelectric speaker (convex adj cover)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 09:54
S2	1	piezoelectric (convex adj cover)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 09:55
S3	0	piezoelectric disk (convex adj cover)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 09:56
S4	5	piezoelectric disk (convex near cover)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 10:08
S5	1216	piezoelectric disk convex cover	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 10:08
S6	84	(piezoelectric near disk) convex cover	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 10:09
S7	76	S6 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 10:09

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	6212	piezoelectric (disk or plate) resonator	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:01
S2	5447	S1 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:02
S3	51	S2 ("convex plano" or "convex-plano" or "plano-convex")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:05
S4	0	S3 speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:03
S5	4	S3 diaphragm	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:09
S6	1027	diaphragm piezoelectric convex	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:10
S7	945	S6 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:10
S8	126	S7 speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:12

## EAST Search History

S9	12	S8 plano	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 13:12
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## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2442	(crystal or piezoelectric) speaker diaphragm	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 16:21
S2	794	S1 (annular or annulus or washer or ring)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 16:22
S3	115	S2 volume (resonator or vibrator)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 16:29
S4	102	S3 @ad<"20050512"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/04 16:29

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1419	undercut with holder	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:09
S2	1437	(wavy wavelike "wave like" wave-like sine sinusoid\$) near (cross-section "cross section" segment)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/11 07:53
S3	0	S1 with S2 with disk	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:12
S4	0	S1 with S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:12
S5	0	S1 same S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:12
S6	0	S1 and S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:13
S7	0	S2 and (undercut with holder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:13
S8	6	S2 and (undercut and holder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:16

## EAST Search History

S9	14	S2 and (undercut and groove)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:31
S10	0	S2 and "pressfit"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:31
S11	21	S2 and "press fit"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:31
S12	309612	S11 diaphragm	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:32
S13	2	S11 and diaphragm	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:32
S14	20	(wavy wavelike "wave like" wave-like sine sinusoid\$) near (cross-section "cross section" segment) and mount\$4 and speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/11 11:02
S15	17	"2442791"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/11 09:04
S16	38	(wavy wavelike "wave like" wave-like sine sinusoid\$) near (cross-section "cross section" segment) and speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/11 11:09

## EAST Search History

S17	37	(wavy wavelike "wave like" wave-like sine sinusoid\$) near (cross-section "cross section" segment) and piezoelectric	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/11 11:10
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## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	7	(piezoelectric or crystal)(internal near groove) ("cross section" or "cross-section") annulus	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 13:47
S2	3	piezoelectric mounting (internal near groove) ("cross section" or "cross-section") annulus	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 13:48
S3	18	piezoelectric mounting (internal near groove) ("cross section" or "cross-section")	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 13:49
S4	9	S3 @ad<"20020808"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 14:15
S5	0	cover "bounded by annulus"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 14:42
S6	0	"bounded by annulus"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 14:42
S7	0	"bounded by an annulus"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 14:42
S8	57839	"convex surface"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 14:43



## EAST Search History

S9	1505	S8 annulus	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 14:43
S10	859	S9 @ad<"20020808"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 14:45
S11	51	S10 (piezoelectric or crystal)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 14:46
S12	1	S10 speaker	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:06
S13	8	("2037187").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/05/09 15:13
S14	2	("4050541").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/05/09 15:20
S15	2349	(convex or dome) (bounded or mates) diaphragm	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:22
S16	378	S15 (crystal or piezoelectric)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:23

## EAST Search History

S17	139	S16 (wavelike or wave-like or sinusoid or sinusoidal)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:27
S18	89	S17 annulus	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:24
S19	3145007	"19" @ad<"20020808"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:25
S20	87	S18 @ad<"20020808"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:26
S21	0	S20 (speaker or microphone)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:27
S22	9	S17 (speaker or microphone)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/05/09 15:27

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1419	undercut with holder	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:09
S2	1437	(wavy wavelike "wave like" wave-like sine sinusoid\$) near (cross-section "cross section" segment)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:12
S3	0	S1 with S2 with disk	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:12
S4	0	S1 with S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:12
S5	0	S1 same S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:12
S6	0	S1 and S2	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:13
S7	0	S2 and (undercut with holder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:13
S8	6	S2 and (undercut and holder)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:16

## EAST Search History

S9	14	S2 and (undercut and groove)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:31
S10	0	S2 and "pressfit"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:31
S11	21	S2 and "press fit"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:31
S12	309612	S11 diaphragm	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:32
S13	2	S11 and diaphragm	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/05/10 16:32

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	251	Melman.in.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 15:15
L2	201	1 and @ad<"20020808"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/06/07 15:32
L3	105	darby.as. @ad<"20020808"	US-PGPUB; USPAT; <del>USOCR;</del> EPO; JPO; <del>DERWENT;</del> <del>IBM_TDB</del>	AND	ON	2006/06/07 15:32